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VA, SPO collaborate on B-2 maintenance

by Philip Ghearing, Air Vehicles Directorate

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Engineers from the Air Force Research Laboratory's Air Vehicles Directorate, Structures Division successfully completed phase I support for the B-2 SPO's aft deck maintenance program. This program originated after cracks were discovered in B-2 aft decks causing operational and mission capability concerns.

The B-2 system program office, familiar with VA's proficiency with extreme thermal and acoustic environments, contacted the directorate for assistance with their project. A team of VA engineers were fielded together with Northrop Grumman and the B-2 SPO, and worked to develop an aft deck repair concept that would meet the needs of Air Combat Command.

Designing a repair concept was complicated by several factors, such as the questionable cause of the cracking, severe operational environment, low observable signature concerns, and difficulties in dealing with the deck material. AFRL/VAS, working with Northrop Grumman, was tasked to design a contingency repair that could overcome these complications and keep the fleet flying until a more permanent solution was found, and to do so within a five-month timeframe.

After a few months of work, the team found an interim solution to the cracking problem by attaching a metal plate to an internal moldline in the cracked regions. The plate is rigid enough to provide a proper patch, yet flexible enough to allow for the natural tendency of the deck to buckle and not cause the cracks to migrate elsewhere.

The next maintenance phase involves determining the cause of the cracking problem and possible redesign of the B-2 body. The Structures Division is already involved in these efforts, which are scheduled for completion in August 2004. @